

## AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of producing nitride based heterostructure devices comprising the steps of:

providing a substrate;

applying a ~~ternary~~ buffer layer on the substrate, wherein the ~~ternary~~ buffer layer includes Ga, In, and N; and

applying a quaternary layer on the ~~ternary~~ buffer layer, wherein the quaternary layer includes Ga, Al, N, and In.

2. (Original) The method of claim 1, wherein the substrate comprises one of the group comprising sapphire, SiC, ZnO, a spinel substrate, Si, anodized alumina, and AlN.

3-6 (Canceled)

7. (Previously Amended) The method of claim 1, wherein the quaternary layer includes about a 20% to 30% molar fraction of Al.

8. (Original) The method of claim 7, wherein the quaternary layer further includes about a 2% to 5% molar fraction of In.

9. (Currently Amended) A method of producing nitride based heterostructure devices comprising the steps of:

providing a substrate;

applying a buffer layer on the substrate, wherein the buffer layer include In;

applying a first layer including GaN on the buffer layer;

applying a second layer on the first layer, wherein the second layer includes AlGaIn; and

applying a quaternary layer on the second layer, wherein the quaternary layer includes AlInGaIn.

10. (Original) The method of claim 9, wherein the substrate includes one of the group comprising sapphire, SiC, ZnO, a spinel substrate, Si, anodized alumina, and AlN.

11. (Original) The method of claim 9, wherein the quaternary layer includes about a 20% to about 30% molar fraction of Al.

12. (Original) The method of claim 11, wherein the quaternary layer further includes about a 2% to about 5% molar fraction of In.

Claims 13-20 (Canceled)

21. (Currently Amended) The method of claim ~~20~~ 9, wherein ~~the buffer layer and the first layer~~ further ~~include~~ includes In.

22. (Currently Amended) A method of producing nitride based heterostructure devices comprising the steps of:

providing a substrate;

providing a buffer layer on the substrate, wherein the buffer layer includes In;

applying a ternary layer on the buffer layer, wherein the ternary layer includes Ga, In, and N; and

applying a quaternary layer on the ternary layer, wherein the quaternary layer includes Ga, Al, In, and N.

23. (Previously Added) The method of claim 22, wherein the buffer layer includes Al and N.

24. (Canceled)